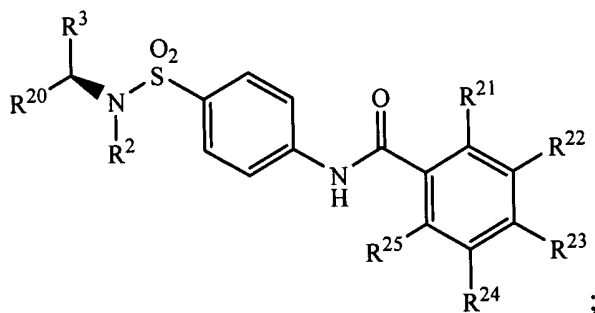


### Claims

1. **(previously amended)** A compound; an enantiomer, diastereomer, racemate, or tautomer of the compound; or a salt of the compound, enantiomer, diastereomer, racemate, or tautomer, wherein:

the compound has the following structure:



$R^2$  is morpholinylalkyl;

$R^3$  is selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, haloalkyl, alkylaryl, arylalkyl, alkoxy, alkoxyalkyl, hydroxyalkyl, aminoalkyl, alkylaminoalkyl, haloalkoxy, and haloalkylthio;

$R^{20}$  is selected from the group consisting of  $-C(O)OH$ ,  $-SH$ , and  $-C(O)SH$ ; and

$R^{21}$ ,  $R^{22}$ ,  $R^{23}$ ,  $R^{24}$ , and  $R^{25}$  are independently selected from the group consisting of H,  $C_1$  to about  $C_{20}$  alkyl,  $C_1$  to about  $C_{20}$  alkenyl,  $C_1$  to about  $C_{20}$  alkynyl, cycloalkyl, haloalkyl, alkoxyalkyl, hydroxyalkyl, aminoalkyl, alkylaminoalkyl, nitroalkyl, alkoxy, cycloalkoxy, alkoxy carbonyl, alkoxyalkyl, haloalkoxy, haloalkylthio, alkylamino, and carboxyalkyl.

2. **(previously amended)** The compound, enantiomer, diastereomer, racemate, tautomer, or salt of claim 1 wherein  $R^{20}$  is  $-C(O)OH$ .

3. **(previously amended)** The compound, enantiomer, diastereomer, racemate, tautomer, or salt of claim 2 wherein  $R^{21}$  and  $R^{25}$  are H.

4. **(previously amended)** The compound, enantiomer, diastereomer, racemate, tautomer, or salt of claim 3 wherein  $R^{22}$  and  $R^{24}$  are H.

5. **(previously amended)** The compound, enantiomer, diastereomer, racemate, tautomer, or salt of claim 4 wherein  $R^{23}$  is  $C_1$  to about  $C_{20}$  alkyl.

6. **(previously amended)** The compound, enantiomer, diastereomer, racemate, tautomer, or salt of claim 5 wherein  $R^{23}$  is  $C_1$  to about  $C_{20}$  linear alkyl.

**Claim 7 (canceled).**

8. **(previously amended)** The compound, enantiomer, diastereomer, racemate, tautomer, or salt of claim 2 wherein  $R^3$  is selected from the group consisting of alkyl, alkenyl, alkynyl, haloalkoxy, and haloalkylthio.

**Claim 9 (canceled).**

10. **(previously amended)** The compound, enantiomer, diastereomer, racemate, tautomer, or salt of claim 8 wherein  $R^2$  is 2-(N-morpholino)ethyl.

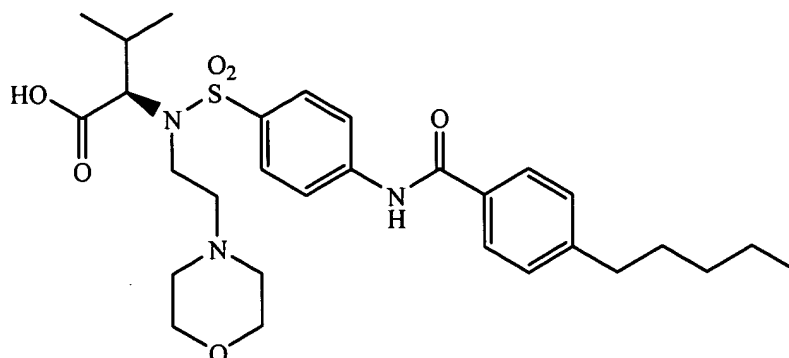
**Claim 11 (canceled).**

12. **(previously amended)** The compound, enantiomer, diastereomer, racemate, tautomer, or salt of claim 6 wherein  $R^3$  is selected from the group consisting of alkyl, alkenyl, alkynyl, haloalkoxy, and haloalkylthio.

**Claim 13 (canceled).**

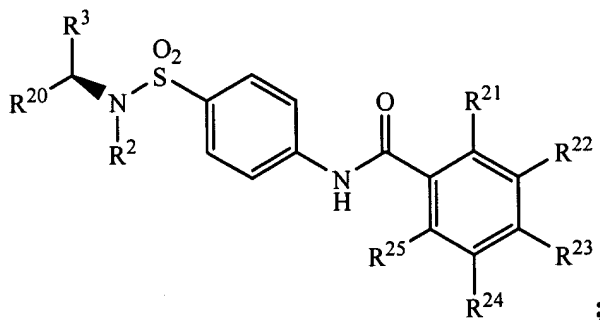
14. **(previously amended)** The compound, enantiomer, diastereomer, racemate, tautomer, or salt of claim 6 wherein  $R^2$  is 2-(N-morpholino)ethyl.

15. **(previously amended)** The compound, enantiomer, diastereomer, racemate, tautomer, or salt of claim 10 wherein the compound has the following structure:



**Claims 16-38 (canceled).**

39. **(previously amended)** A method of inhibiting a matrix metalloproteinase, wherein:  
the method comprises contacting the matrix metalloproteinase with a compound; an enantiomer, diastereomer, racemate, or tautomer of the compound; or a salt of the compound, enantiomer, diastereomer, racemate, or tautomer;  
the compound has the following formula:



$R^2$  is morpholinylalkyl;

$R^3$  is selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, haloalkyl, alkylaryl, arylalkyl, alkoxy, alkoxyalkyl, hydroxyalkyl, aminoalkyl, alkylaminoalkyl, haloalkoxy, and haloalkylthio;

$R^{20}$  is selected from the group consisting of  $-C(O)OH$ ,  $-SH$ , and  $-C(O)SH$ ; and

$R^{21}$ ,  $R^{22}$ ,  $R^{23}$ ,  $R^{24}$ , and  $R^{25}$  are independently selected from the group consisting of H,  $C_1$  to about  $C_{20}$  alkyl,  $C_1$  to about  $C_{20}$  alkenyl,  $C_1$  to about  $C_{20}$  alkynyl, cycloalkyl, haloalkyl,

alkoxyalkyl, hydroxyalkyl, aminoalkyl, alkylaminoalkyl, nitroalkyl, alkoxy, cycloalkoxy, alkoxycarbonyl, alkoxyalkyl, haloalkoxy, haloalkylthio, alkylamino, and carboxyalkyl.

40. **(previously amended)** The method of claim 39 wherein  $R^{20}$  is  $-C(O)OH$ .

41. **(previously amended)** The method of claim 39 wherein  $R^3$  is selected from the group consisting of H, alkyl, alkenyl, alkynyl, haloalkoxy, and haloalkylthio.

42. **(original)** The method of claim 41 wherein  $R^3$  is a  $C_1$  to about  $C_{12}$  alkyl.

43. **(original)** The method of claim 42 wherein  $R^3$  is a  $C_1$  to about  $C_4$  alkyl.

44. **(original)** The method of claim 43 wherein  $R^3$  is isopropyl.

**Claim 45 (canceled).**

46. **(previously amended)** The method of claim 39 wherein  $R^2$  is 2-(N-morpholino)ethyl.

47. **(original)** The method of claim 39 wherein  $R^{21}$  and  $R^{25}$  are H.

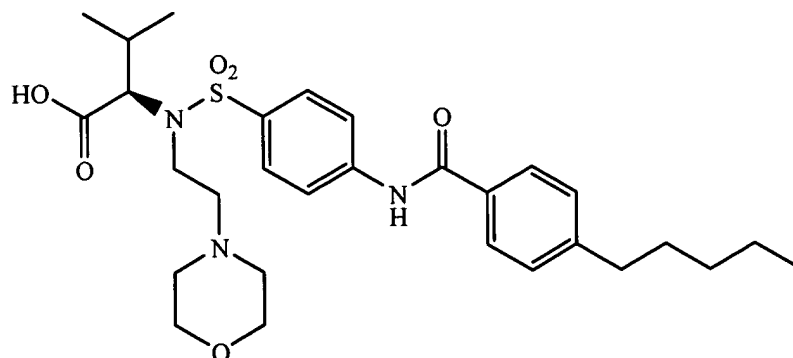
48. **(original)** The method of claim 47 wherein  $R^{22}$  and  $R^{24}$  are H.

49. **(original)** The method of claim 48 wherein  $R^{23}$  is  $C_1$  to about  $C_{20}$  alkyl.

50. **(original)** The method of claim 49 wherein  $R^{23}$  is methyl or  $C_2$  to about  $C_{20}$  linear alkyl.

51. **(original)** The method of claim 50 wherein  $R^{23}$  is n-pentyl or n-hexyl.

52. **(previously amended)** The method of claim 51 wherein the compound has the following structure:

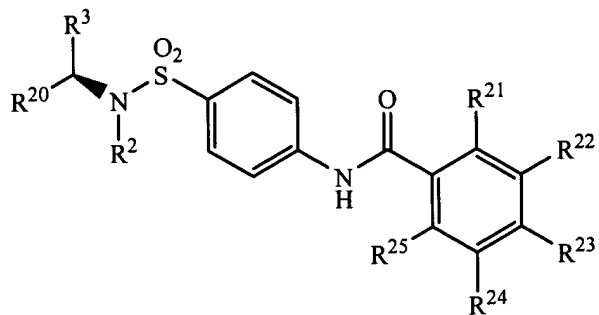


**Claims 53-56 (canceled).**

57. **(previously amended)** The method of claim 39 wherein the matrix metalloproteinase is MMP-8.

58. **(previously amended)** The method of claim 39 wherein the matrix metalloproteinase is MMP-13.

59. **(previously amended)** A method treating osteoarthritis in a mammal, wherein:  
the method comprises providing to the mammal an osteoarthritis-treating-effective amount of a compound; an enantiomer, diastereomer, racemate, or tautomer of the compound; or a salt of the compound, enantiomer, diastereomer, racemate, or tautomer;  
the compound has the following formula:



R<sup>2</sup> is morpholinylalkyl;

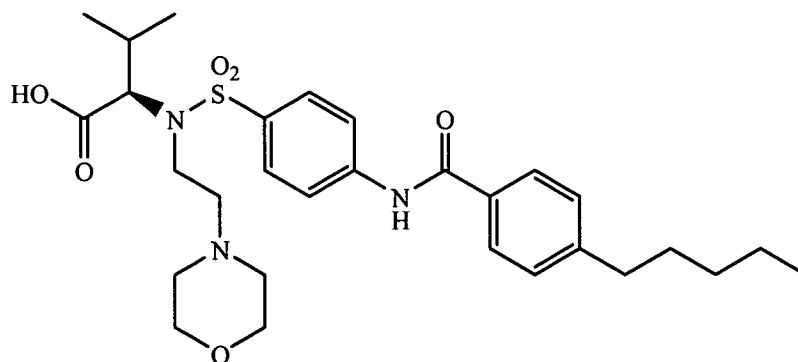
$R^3$  is selected from the group consisting of H, alkyl, alkenyl, alkynyl, cycloalkyl, haloalkyl, alkylaryl, arylalkyl, alkoxy, alkoxyalkyl, hydroxyalkyl, aminoalkyl, alkylaminoalkyl, haloalkoxy, and haloalkylthio;

$R^{20}$  is selected from the group consisting of  $-C(O)OH$ ,  $-SH$ , and  $-C(O)SH$ ; and

$R^{21}$ ,  $R^{22}$ ,  $R^{23}$ ,  $R^{24}$ , and  $R^{25}$  are independently selected from the group consisting of H,  $C_1$  to about  $C_{20}$  alkyl,  $C_1$  to about  $C_{20}$  alkenyl,  $C_1$  to about  $C_{20}$  alkynyl, cycloalkyl, haloalkyl, alkoxyalkyl, hydroxyalkyl, aminoalkyl, alkylaminoalkyl, nitroalkyl, alkoxy, cycloalkoxy, alkoxycarbonyl, alkoxyalkyl, haloalkoxy, haloalkylthio, alkylamino, and carboxyalkyl.

60. **(original)** The method of claim 59 wherein the mammal is a human.

61. **(previously amended)** The method of claim 60 wherein the compound has the following structure:



**Claims 62-64 (canceled).**